

Time Schedule

S: Invited Talk 30(25+5) min., O: Oral Talk 20(15+5) min

	23(Mon.)	24(Tue.)	25(Wed.)
	Hall "Fuji 1", 1F	Hall "Fuji 1", 1F	Hall "Fuji 1", 1F
Morning	9:00 Registration	9:00- (Chair: Akio Kawai)	9:00- (Chair: Hiroyuki Mino)
	10:00 Opening Talk	S4 Christiane Timmel O9 Tadaaki Ikoma O10 Hiroaki Yonemura O11 Kiminori Maeda	S9 Harold M. Swartz O20 Koichi Nakagawa O21 Hiroshi Hirata
	10:10- (Chair: Seigo Yamauchi) S1 Klaus Möbius (Chair: Gerd Kothe) S2 Daniella Goldfarb O1 Asako Kawamori O2 Toshiaki Arata	10:35-10:50 Coffee Break	10:15-10:30 Coffee Break
		10:50- (Chair: Toshikazu Nakamura) S5 Mark Sherwin O12 Hitoshi Ohta O13 Shinichi Kuroda	10:30- (Chair: Tadaaki Ikoma) S10 Osamu Sato S11 Elena Bagryanskaya O22 Kazuhiro Marumoto O23 Ko Furukawa
	12:00-13:20 Lunch (Restaurant "Celese", B1F)	12:00-14:30 Lunch (Lunch Cruise:12:15-14:15)	12:15-13:20 Lunch (Restaurant "Celese", B1F)
Afternoon	13:20- (Chair: Kiminori Maeda) S3 Michael R. Wasielewski O3 Yasuhiro Kobori O4 Tomoaki Miura	14:30- (Chair: Kazunobu Sato) S6 Olav Schiemann O14 Yun-Wei Chiang O15 Rui Tamura (Chair: Hiroaki Yonemura) O16 Akio Kawai O17 Keiji Okada	13:20-14:50 (Chair: Kazuhiro Marumoto) S12 Gerd Kothe O24 Kazunobu Sato O25 Shigeaki Nakazawa O26 Norikazu Mizuochi
	14:35-14:50 Coffee Break	16:25-16:40 Coffee Break	14:50-15:00 Closing
	14:50-16:15 (Chair: Ikuko Akimoto) O5 Kenji Komaguchi O6 Takayuki Kumada O7 Jun Kumagai O8 Kenji Sugisaki	16:40-18:35 (Chair: Yasuhiro Kobori) S7 Jian-Ren Shen O18 Hideto Matsuoka O19 Hiroyuki Mino S8 Wolfgang Lubitz	15:30- Excursion (Matsushima Bay)
	16:30-18:00 Poster Session (Hall "Fuji 2", 1F)	T1 Morino Foundation Koichi Yamada	
Evening	18:00- Welcome Mixer (Restaurant "Shiosai", 7F)	19:00-21:00 Banquet (Hall "Chiyo", 1F)	

Organizer's Office: Room "Godai", 2F

Scientific Program

S: Invited Talk 30(25+5) min., O: Oral Talk 20(15+5) min

July 23, 2012

(Chair: Seigo Yamauchi)

- 10:10- **S1 News and Views of High-Field Dipolar EPR Spectroscopy : Probing Conformational Changes in Photosynthetic Protein Complexes**

Klaus Möbius

Department of Physics, Free University Berlin, Germany, Max Planck Institute for Chemical Energy Conversion, Germany

(Chair: Gerd Kothe)

- 10:40 **S2 High Field and High Spin - A Different Approach for Long Range Distance Measurements by EPR Spectroscopy**

Daniella Goldfarb

Department of Chemical Physics, Weizmann Institute of Science, Israel.

- 11:10 **O1 Comparison of the structure of Photosystem II in spinach and cyanobacterium studied by PELDOR**

Asako Kawamori, and Jian-Ren Shen

AGAPE-Kabutoyama Institute of Medicine, Japan; Department of Biology, Okayama University, Japan

- 11:30 **O2 Mechanism of Molecular Machines, Switch, Motor, and Clock Proteins, Studied by Distance Measurements Using Spin Labeling and Pulse/CW ESR**

Keisuke Ueda, Kentaro Ishii, Satoshi Yasuda, Shinji Takai, Akie Yamamoto, Chenchao Zhao, Takayasu Somiya, Yoshiki Tsujimoto, Takuya Horimoto, Tomoki Aihara, Shoji Ueki, and Toshiaki Arata

Department of Biological Sciences, Graduate School of Science, Osaka Univ., Japan; Center for Gene Research, Nagoya University, Japan; Institutes for Protein Research, Osaka University, Japan; X-ray Structural Analysis Research Team, RIKEN Harima Institute, Japan; Kagawa School of Pharmaceutical Sciences, Tokushima-Bunri University, Japan

12:00-13:20 **Lunch Break**

(Chair: Kiminori Maeda)

- 13:20 **S3 Fast Photo-driven Electron Spin Coherence Transfer : A Quantum Gate Based on a Spin Exchange J-Jump**

Lukas Kobr, Daniel M. Gardner, Amanda L. Smeigh, Scott M. Dyar, Steven D. Karlen, Raanan Carmieli, and Michael R. Wasielewski

Department of Chemistry and Argonne-Northwestern Solar Energy Research Center, Northwestern University, USA

- 13:50 **O3 Structure and Electronic Coupling of Photoinduced Charge-Separated States Bound in Photovoltaic Donor-Acceptor Bulk Heterojunction Interfaces**

Yasuhiro Kobori, Ryohei Noji and Shuhei Tsuganezawa

Department of Chemistry, Faculty of Science, Shizuoka University, Japan; PRESTO, Japan Science and Technology Agency, Japan

- 14:10 **O4 Spin Dynamics of a Long-lived Singlet Born Radical Ion Pair Created in an Acceptor-adsorbed Micellar Super-cage**

Tomoaki Miura

Department of Chemistry, Keio University, Japan

14:35-14:50 **Coffee Break**

(Chair: Ikuko Akimoto)

14:50 O5 **Trapping of Atomic Hydrogen in Octasilsesquioxane Cages by Electric Glow**

Kenji Komaguchi, Ryota Okayama, Kazuyuki Oka, Ichiro Imae, Yousuke Ooyama, Yutaka Harima

Department of Applied Chemistry, Graduate School of Engineering, Hiroshima University,

15:10 O6 **High-Resolution ESR Spectroscopy and Low-Temperature Reactions in Solid Hydrogens**

Takayuki Kumada, Masato Minami, Yuta Shimizu, and Jun Kumagai

Quantum Beam Science Directorate, Kansai Photon Science Institute, Japan Atomic Energy Agency, Japan; Department of Applied Chemistry, Graduate School of Engineering, Nagoya University, Japan

15:30 O7 **H₆⁺ chemistry in solid parahydrogen**

Jun Kumagai, Yuta Shimizu, and Takayuki Kumada

Department of Applied Chemistry, Graduate School of Engineering, Nagoya University, Japan; Quantum Beam Science Directorate, Kansai Photon Science Institute, Japan Atomic Energy Agency, Japan

15:50 O8 **Theoretical Study of the Zero-Field Splitting Tensors of Quinonoid Dinitrenes: Origin of the Extraordinary Large |D| Values**

Kenji Sugisaki, Kazuo Toyota, Kazunobu Sato, Daisuke Shiomi, Masahiro Kitagawa, and Takeji Takui

Department of Chemistry, Graduate School of Science, Osaka City University, Japan; Department of System Innovation, Graduate School of Engineering Science, Osaka University, Japan

16:30-18:00 **Poster Session**

18:00- **Welcome Mixer**

July 24, 2012

(Chair: Akio Kawai)

- 9:00 **S4 A New Net Won't Catch an Old Bird - But Will New Techniques Catch an "Old" Cryptochrome?**
Kiminori Maeda, Simon R. T. Neil, Dean M.W. Sheppard, Jing Li, Alexander J. Robinson, Kevin B. Henbest, Hannah J. Hogben, Till Biskup, Margaret Ahmad, Erik Schleicher, Stefan Weber, Peter J. Hore, Stuart R. Mackenzie & Christiane R. Timmel
Centre for Advanced Electron Spin Resonance & Inorganic Chemistry Laboratory, University of Oxford, UK; Physical and Theoretical Chemistry Laboratory, University of Oxford, UK; Université Paris VI, France; Institut für Physicalische Chemie, Albert-Ludwigs-Universität Freiburg, Germany
- 9:30 **O9 Blend Ratio Dependence of Low Magnetic Field Effect in P3HT/PCBM Bulk Heterojunction Solar Cell**
Ryosuke Kobayashi, Christopher Escabarte Ambe, Tadaaki Ikoma, and Ken-ichi
Graduate School of Science and Technology: Niigata University, Japan; CREST: Japan Science and Technology Agency, Japan; Graduate School of Science and Engineering: Yamagata University, Japan
- 9:50 **O10 Magnetic Field Effects on the Decay Rates of a Photogenerated Biradical from Donor-Acceptor Linked Compounds in Ionic Liquids**
Hiroaki Yonemura, Hironobu Tahara, Akio Nakashima and Sunao Yamada
Department of Applied Chemistry, Faculty of Engineering, Kyushu University, Japan; Department of Materials Physics and Chemistry, Graduate School of Engineering, Kyushu University, Japan
- 10:10 **O11 Sensitive methods for the observation of Magnetic Field Effects on photochemical reactions of biomolecules**
K. Maeda, K. B. Henbest, S. R. T. Neil, J. G. Storey¹, J. Li, D.M.W. Sheppard, E. W. Evans, E. Schleicher, S. Weber, S. R. Mackenzie, P. J. Hore, C. R. Timmel
Centre for Advanced Electron Spin Resonance & Inorganic Chemistry Laboratory, University of Oxford, UK; Physical and Theoretical Chemistry Laboratory, University of Oxford, UK; Institut für Physicalische Chemie, Albert-Ludwigs-Universität Freiburg, Germany
- 10:35-10:50 **Coffee Break**

(Chair: Toshikazu Nakamura)

- 10:50 **S5 Free-Electron Laser-Powered Pulsed EPR Spectroscopy**
Mark S. Sherwin, Susumu Takahashi, Devin Edwards, Louis Claude Brunel, Johan van Tol, Gerald Ramian, and Song-I Han
Department of Physics, and Institute for Terahertz Science and Technology (ITST), University of California, USA; Department of Chemistry, University of Southern California, USA; National High Magnetic Field Laboratory, USA

- 11:20 **O12 THz Antiferromagnetic Gap and Anisotropic g-values in Multiferroic Material CuO Determined by High-Field THz ESR**
Hitoshi Ohta, Susumu Okubo, Takumi Kobayashi, Takahiro Sakurai, Weimin Zhang, Chiori Yokoyama, Xu-Guang Zheng, Sadafumi Nishihara, Katsuya Inoue, Masashi Fujisawa, Hikomitsu Kikuchi, Eiichi Matsuoka, Hitoshi Sugawara
Molecular Photoscience Research Center, Kobe University, Japan; Graduate School of Science, Kobe University, Japan; Center for Supports to Research and Education Activities, Kobe University, Japan; Department of Physics, Saga University, Japan, Department of Chemistry, Hiroshima University, Japan; Institute for Advanced Materials Research, Hiroshima University, Japan; Department of Applied Physics, University of Fukui, Japan
- 11:40 **O13 ESR Studies of Charge-Carrier g-values and Interfacial Molecular Orientation in High-Mobility Organic Transistors**
Shin-ichi Kuroda, Hisaaki Tanaka, Shun-ichiro Watanabe, and Yukihiro Shimoi
Department of Applied Physics, Nagoya University, Japan; Nanosystem Research Institute (NRI), National Institute of Advanced Industrial Science and Technology (AIST),
- 12:00-14:30 **Lunch Break**
 (* Lunch Cruise : 12:15-14:15)

(Chair: Kazunobu Sato)

- 14:30 **S6 Unravelling Conformational States of Materials and Proteins with PELDOR, DQC and New Labels**
Olav Schiemann
Institute of Physical and Theoretical Chemistry, University of Bonn, Germany; Biomedical Sciences Research Complex, University of St.Andrews, UK
- 15:00 **O14 Nanoconfinement Effect Improves the Study of Protein Dynamics by Electron Spin Resonance**
Yun-Wei Chiang
Department of Chemistry, National Tsing Hua University, Taiwan
- 15:20 **O15 Observation of Magneto-LC Effects in All-Organic Nitroxide Radical Liquid Crystals under Weak Magnetic Fields**
Rui Tamura, Katsuaki Suzuki, Yoshiaki Uchida, Satoshi Shimono, and Jun Yamauchi
Graduate School of Human and Environmental Studies, Kyoto University, Japan

(Chair: Hiroaki Yonemura)

- 15:40 **O16 Solute Rotation Dynamics in Ionic Liquids As Studied by Electron Paramagnetic Resonance Spectroscopy of Peroxylamine Disulfonate**
 Yusuke Miyake, Ryuta Aramaki, Nobuyuki Akai, Akio Kawai, and Kazuhiko Shibuya
Tokyo Institute of Technology, Japan
- 16:00 **O17 Trinitroxide-Trioxyltriphenylamine: Neutral and Radical Cation States**
 Shuichi Suzuki, Atsuki Nagata, Masatoshi Kozaki, Daisuke Shiomi, Kazunobu Sato, Takeji Takui, and Keiji Okada
Department of Chemistry, Graduate School of Science, Osaka City University, Japan

16:25-16:40 **Coffee Break**

(Chair: Yasuhiro Kobori)

- 16:40 *S7* **Atomic Structure of Photosystem II and the Mn_4CaO_5 -Cluster that Enables Photosynthetic Water-splitting**
 Jian-Ren Shen
 Graduate School of Natural Science and Technology, Okayama, Japan
- 17:10 *O18* **Multi-Frequency EPR studies of Mn_4CaO_5 and Mn_4SrO_5 clusters**
 Hideto Matsuoka, Jian-Ren Shen, Shinya Ito, Yasunori Ohba, and Seigo Yamauchi
 IMRAM, Tohoku University, Japan; Graduate School of Natural Science and Technology, Okayama University, Japan
- 17:30 *O19* **The magnetic structure of Mn cluster and surroundings in the oriented PS II membranes studied by PELDOR and proton matrix ENDOR**
 Hiroyuki Mino, Mizue Asada, Hiroki Nagashima, Faisal Hammad Mekky Koua, and Jian-Ren Shen
 Division of Material Science, Graduate School of Science, Nagoya University, Japan; Division of Bioscience, Graduate School of Natural Science and Technology/Faculty of Science, Okayama University, Japan
- 17:50 *S8* **Unravelling Structure and Function of the Water Oxidizing Complex in Photosynthesis by High Field EPR, ENDOR and ELDOR-Detected NMR**
 Wolfgang Lubitz
 Max Planck Institute for Chemical Energy Conversion
- 18:20 *T1* Koichi Yamada, EMTech, AIST
 Morino Foundation for Molecular Science
- 19:00-21:00 **Banquet**

July 25, 2012

(Chair: Hiroyuki Mino)

9:00 **S9 Clinical EPR: Challenges and Progress**

Harold M. Swartz

The Geisel Medical School at Dartmouth, USA

9:30 **O20 A 9 GHz EPR Imager: A Possible Application to Skin**

Kouichi Nakagawa, Yasunori Ohba, Boris Epel, and Hitoshi Hirata

Department of Radiological Life Sciences, Graduate School of Health Sciences, Hirosaki University, Japan; Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Japan; Department of Radiation & Cellular Oncology, The University of Chicago, USA; Division of Bioengineering and Bioinformatics, Graduate School of Information Science and Technology, Hokkaido University, Japan

9:50 **O21 EPR-based pH mapping using spectral-spatial imaging of sequentially scanned spectra**

Shunichi Koda, Jonathan Goodwin, Valery V. Khramtsov, Hirotada Fujii, Hiroshi Hirata

Div. of Bioengineering and Bioinformatics, Hokkaido University, Japan; Div. of Ultrahigh Field MRI, Institute for Biomedical Sciences, Iwate Medical University, Japan; Department of Internal Medicine, The Ohio State University, USA; Center for Medical Education, Sapporo Medical University, Japan

10:15-10:30 **Coffee Break**

(Chair: Tadaaki Ikoma)

10:30 **S10 Control of Magnetic Properties in Molecule-Based Magnets**

Osamu Sato, Soonchul Kang, Shinji Kanegawa, and Tao Liu

Kyushu University, Institute for Materials Chemistry and Engineering, Japan; Dalian University of Technology, State Key Laboratory of Fine Chemicals, China

11:00 **S11 Thermal and Optical Switching of the Exchange Interactions in Nitroxide-Copper(II)-Nitroxide Clusters**

Elena Bagryanskaya, Matvey Fedin, Sergei Veber, Victor Ovcharenko, Hideto Matsuoka, and Seigo Yamauchi

International Tomography Center SB RAS, Russian Federation; Novosibirsk Institute of Organic Chemistry SB RAS, Russian Federation; Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Japan

11:30 **O22 Charge Formation in Pentacene Layers during Solar-Cell Fabrication : Direct Observation by Electron Spin Resonance**

Kazuhiro Marumoto, Takuya Fujimori, and Masaaki Ito

Faculty of Pure and Applied Sciences, University of Tsukuba, Japan; Japan Science and Technology Agency (JST), PRESTO, Japan

11:50 **O23 Spin Dynamics for Photoconductive Materials, TTF-derivatives**

Ko Furukawa, Keijiro Tsujimoto, Hideki Fujiwara, Seiya Takahashi, and Toshikazu

Institute for Molecular Science, Japan; Graduate University for Advanced Studies, Japan; Osaka Prefecture University, Japan; Yokohama National University, Japan.

12:15-13:20 **Lunch Break**

(Chair: Kazuhiro Marumoto)

- 13:20 **S12 Quantum Oscillations and Spin Entanglement in Photoexcited Triplet States**
Gerd Kothe, Tomoaki Yago, Michail Lukaschek, Jörg-Ulrich Weidner, Gerhard Link, David J. Sloop, and Tien-Sun Lin
Department of Physical Chemistry, University of Freiburg, Germany; Department of Chemistry, Washington University, USA
- 13:50 **O24 Novel Quantum Behavior in Highly-Symmetric Hexamethoxy Phenalenyl as Studied by Pulsed FT-ESR Spectroscopy**
Kazunobu Sato, Kenta Yoshida, Shuichi Suzuki, Akira Ueda, Yasushi Morita, Kazuo Toyota, Daisuke Shiomi, Kazuhiro Nakasuji, and Takeji Takui
Graduate School of Science, Osaka City University, Japan; Graduate School of Science, Osaka University, Japan; Fukui University of Technology, Japan; FIRST-Quantum Information Processing Project, Japan
- 14:10 **O25 Synthetic Electron Spin Qubits as Manipulated by Pulsed ESR Spectroscopy : g-/A- Engineering Approach**
Shigeaki Nakazawa, Shinsuke Nishida, Tomoaki Ise, Yasushi Morita, Kazuo Toyota, Daisuke Shiomi, Kazunobu Sato, Masahiro Kitagawa, Hideyuki Hara, Patrick Carl, Peter Höfer, and Takeji Takui
Graduate School of Science, Osaka City University, Japan; Graduate School of Science, Osaka University, Japan; Graduate School of Engineering Science, Osaka University, Japan; Bruker Biospin K.K., Japan; Bruker Biospin GmbH, Germany; FIRST-Quantum Information Processing Project, Japan
- 14:30 **O26 Control of single spins and single photons in diamond at room temperature**
N. Mizuochi, T. Shimooka, Y. Doi, S. Mori, T. Makino, H. Kato, D. Takeuchi, M. Ogura, H. Okushi, M. Nothaft, P. Neumann, A. Gali, F. Jelezko, J. Wrachtrup, S. Miwa, Y. Suzuki, S. Yamasaki
Graduate School of Engineering Science, Osaka University, Japan; JST CREST, Japan; Energy Technology Research Institute-AIST, Japan; Physikalisches Institut, Universität Stuttgart, Germany; Department of Atomic Physics, Budapest University of Technology and Economics, Hungary; Institut für Quantenoptik, Universität Ulm, Germany
- 14:50-15:00 **Closing**
- 15:30- **Excursion**